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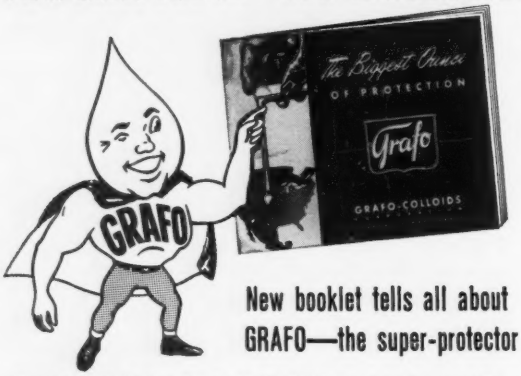

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M. C. Shaw and P. A. Smith, "Workpiece Compatibility of Ceramic Cutting Tools"

It is now well known that certain types of cemented carbides give excellent results when used to cut cast irons but poor results when used to cut steels and vice versa. This relative ability of a given tool material to perform well when cutting a given workpiece material is referred to here as compatibility.

Ceramic metal cutting tools have been in use in machining metals such a short time that it is not yet generally known on which materials these tools can be used to best advantage. In this report the performance of ceramic and cemented carbide tools is compared when machining a wide variety of metals. It is found that there are certain metals for which either the surface chemical or thermal characteristics of ceramic tools are particularly advantageous.

The report is concluded by a table which lists a large number of ferrous and nonferrous metals in order of decreasing compatibility with aluminum oxide tools.